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ABSTRACT

There are concerns among educational theorists about the conservation of the environment and the rural life style and teaching students to be active community members. This has led to the publication of research papers on place-based theories, preservice teacher education, and a review of a national placed-based development program. The topic of K-12 curriculum development in rural communities, however, has not been addressed in any of the current research. This document presents a study aiming to provide guidance on local curriculum development for schools interested in creating their own place-based programs to enhance students' academic achievement. Because every place has its unique problems, place-based education encourages local curriculum development. This study involves five school districts with the formation of a consortium to develop place-based K-12 curriculum activities. (Contains 51 references.) (YDS)

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Local Curriculum Development: A Case Study

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LOCAL CURRICULUM DEVELOPMENT: A CASE STUDY

In the pressing mental atmosphere that marks the arrival of the new millennium, theorists inside and outside of education are evaluating the past and proposing new ways of thinking about man's relationships to the environment so that the deteriorating natural environment and social conditions in which we live may be improved (Vitek & Jackson, 1996). These theorists suggest that one way to improve the environment and society is to increase residents' awareness of and knowledge about the place in which they live. Educational theories addressing these issues are usually found under the designations of environmental education (Schneider, 1993), ecological literacy (Orr, 1992), or place-based education (Haas & Nachtigal, 1998). All of these theorists are concerned about what it will take to enable students to "live well" (Haas & Nachtigal, p. vi) wherever they are.

Place-Based Education

Place-based education theory has been expounded by David Orr (1992, 1994) and Toni Haas and Paul Nachtigal (1998). These theorists are concerned with finding a way to preserve the environment and the rural life style, while helping students learn how to become active, involved community members and stewards of the natural environment. As of early 2000, there were six published research reports on place-based education programs (Annenberg Rural Challenge Research and Evaluation Team, 1997, 1999a; Eifler, 1998; Hug, 1998; Langmaid, 1998; Stolp, 1994). However, while these reports discuss place-based theories, preservice teacher education, and review a national place-based development program none of these reports address K-12 curriculum development in rural communities.

A recent study supported by The State Education and Environment Roundtable (Lieberman & Hoody, 1998) focused on 40 schools across the United States that were using the Environment as an Integrating Context (EIC) for learning. This study found that involvement in an EIC program enhanced students' academic performance. It also found that students' involvement in the EIC activities increased their interest in school and improved their behavior.

There are several sources for curriculum guides on place-based education. Three institutions are helping school personnel develop place-based curriculum, but their publications

are either an anthology (Orion Society, 1998a) or the full curriculum is available only through attending one of their training programs (Roger Tory Peterson Institute, 1998; Teton Science School, 1999). Also, the North Central Regional Educational Laboratory (1995) has published a framework for place-based education developed in Iowa. Furthermore, other curriculum guides have been published for place-based education by the Center for Ecoliteracy (1993) and James Lewicki (1997).

However, there was a lack of research examining curriculum developed during the implementation of a place-based education program in a K-12 setting and my research filled this void. My study provided research-based guidance about local curriculum development for schools that are interested in creating their own place-based programs to enhance their students' academic achievements.

Local Curriculum Development

Local curriculum development honors the spirit of place-based education. Place-based education encourages local curriculum development because everyplace has unique problems, issues, and environments to study. Therefore, teachers must create their own activities to meet the interests of the students, themselves, and their communities rather than depend on traditional textbook materials for subject matter.

Local curriculum development has been shown to be an "optimal form of curriculum development and implementation in terms of actual impact in the classroom" (Ponder, 1983, p. 10). However, information about local curriculum development is limited (Henderson & Hawthorne, 1995; Skilbeck, 1990). The few local curriculum development studies that have been conducted have investigated programs that had the assistance of a four-year university or college and were limited to a single discipline or grade level (Enloe, 1992; Hammrich, 1999; Mayo, 1996; Musetti, O'Hara, Gibson, McMahon, 1997; Orion Society, 1998b) or explored a single construct (McCutcheon, 1995; Paris, 1993).

Research Questions

My research occurred in a rural setting where five school districts had formed a consortium to create K-12 place-based education curriculum activities. The consortium was

funded by an Annenberg Rural Challenge grant in 1997. The consortium created a process to fund curriculum development by teachers or organizations and it supported several workshops that served to create or share curriculum. School and community collaboration in developing the curriculum activities was encouraged by requiring that both schools and community people be a part of any funding request. I studied this process in-depth and therefore my research contributes to the knowledge base about local curriculum development. An awareness of these processes is important as society moves away from a centralized model of accomplishing things to a decentralized model.

To focus the study, I used the following research questions:

1. What have those involved in creating place-based curriculum learned as a result of being involved in the development process of new curriculum?
2. What issues have become evident during the implementation of the curriculum throughout the five school districts?

Methodology

I chose to research the curriculum development processes using a qualitative case study methodology (Creswell, 1998; Merriam, 1998). A case study is defined by Creswell (1998) as an investigation into a system that is bounded by time and space. My research of the consortium was bounded by time, the physical environment, and the theoretical environment. The consortium was funded in the fall of 1997 and my research inquired into the curriculum development process from that time through the fall of 1999. The consortium was physically bound within the watershed of the Yampa River and the headwaters of the Colorado River, and it was theoretically bound by the theory of place-based education.

Research Design

Data were collected through in-depth interviewing, document analysis, and observation. I interviewed the participants in one-on-one interviews that were preceded by initial contacts through school district team meetings, the consortium's governing board meetings, attendance at its activities, or phone calls. The interviews were semi-structured with unique interview protocols used for each different group of participants. I transcribed interviews verbatim as soon as

possible after they were conducted (Merriam, 1998; Seidman, 1998) and used a member checking method to confirm that I had recorded the participants' ideas accurately (Ely, 1991).

Documents that were analyzed included approved curriculum development grants, meeting minutes, the consortium's proposal, and curriculum activities that were available through the consortium's office. Document analysis proceeded using a document summary form (Miles & Huberman, 1994).

Observation opportunities took place during consortium-sponsored curriculum development workshops and curriculum sharing workshops. My roles varied from observer to observer as participant to participant as observer (Glesne & Peshkin, 1992; Merriam, 1998). Combining these roles allowed me to participate in group introductions and concluding activities so as not to be seen as a complete outsider. These roles also allowed me to record observations about activities, participants, and settings as a researcher and allowed me to maintain a more traditional sense of objectivity. The participant as observer role allowed me to develop a more intimate relationship with the teachers involved in developing the Community Mapping activities curricula. This intimate relationship enriched and deepened the quality of data that I obtained from the teachers creating the curriculum activities. I felt that the opportunity to gain a better relationship with these teachers more than offset the tendency to "go native" (Ely, 1991) for this one consortium's curriculum development program. The data collected through these methods was recorded in field notes and converted into a field log (Ely, 1991).

I used diagrams and matrices for analysis and for identifying themes in the data. From these graphics, I looked for patterns, themes, and areas of clustering to make sense of the data (Miles & Huberman, 1998). My categories were focused around my research questions, but I was open to new categories that emerged during the data analysis (Merriam, 1998). The categories were mutually exclusive, exhaustive, and conceptually equivalent (Marshal & Rossman, 1995). As the categories evolved, I continued to search for negative examples and alternative explanations of what I was finding (Miles & Huberman, 1998). Overall themes emerged from the categories. Collection and analysis of data continued until the sources were

exhausted, the categories or themes were saturated with examples, and new information that was found was not relevant to the research questions.

Findings

The findings are separated into three sections: curriculum development processes used by the consortium, curriculum development and implementation issues, and curriculum development and implementation outcomes. The processes used by the consortium to create the curriculum activities included supporting individual teachers, school districts' and community organizations' workshops, and school and community collaboration. Issues that arose during the curriculum development and implementation centered on time, ownership, spreading the activities through the schools, structuring the activities, formalizing the curriculum, meeting content standards, and communicating among those involved in the activity. Outcomes from the development and implementation of the place-based curriculum included adult learning and excitement. The findings from each of these areas are shared below.

Curriculum Development Processes

The consortium supported curriculum development by individual teachers, during workshops, and through school-community collaborations. In the first part of this section, the teachers' curriculum development processes are shared, then I describe the workshops and school-community collaboration activities that the consortium supported to create place-based activities.

Processes Used by Teachers

The teachers created curriculum along a continuum between a nonlinear strategy and a linear strategy of development. Teachers who used nonlinear strategies to develop their curriculum began with the activity and then connected it to learning objectives and/or content standards. The linear curriculum developers began with the content standards or curriculum objectives and then found activities that would help students meet the standards and objectives.

After observing the curriculum development processes of groups of teachers and interviewing individual teachers, I began to perceive a nonlinear process used by some teachers as they created new curriculum activities. For example, a group of high school teachers

developed year-long Community Mapping Projects using a Geographical Information Systems (GIS) computer program. The Community Mapping group designed a circular curriculum framework as opposed to more traditional linear models such as the Tyler curriculum model (Tyler, 1949) to emphasize that it was appropriate to begin planning activities with any of the factors they had identified: curriculum development, project ideas and selection, or reflection. Nonlinear curriculum planning was also employed by a group of three high school teachers in another school district who spent a year working together to develop a place-based high school course.

Teachers comfortable with the nonlinear method of curriculum development seemed to enjoy the state of chaos it created which they found to be energizing and creative. However, if a state of disorder was held on to for too long it became counter productive and created a situation where teachers, community members, and students were only reacting to the situation and not planning for it. This curriculum development issue will be discussed in the sections addressing the lack of structure and ownership.

Linear curriculum developers created curriculum activities by beginning with content standards and curriculum objectives and then creating an activity that would enable the students to meet these requirements. Both elementary and secondary teachers used linear development processes. This linear process of developing the curriculum was supported by all of the administrators I interviewed. They emphasized the importance of starting with the objectives or content standards that were to be met when creating a curriculum activity and then creating activities that met the standards and determining how to assess the students' abilities to meet the standard. Thus, linear curriculum development was favored by the administrators, but both elementary and secondary teachers developed curriculum using either nonlinear or linear processes.

Workshops

Several workshops were held as a part of the consortium curriculum development process. They included two workshops held by different school districts and four workshops

planned by community organizations. During each workshop information about the consortium, content standards, and the host organization, where applicable, was shared with the teachers.

School District Workshops.

The 1st and 2nd Annual Yampa River Institutes, held in 1998 and 1999 respectively, were organized by district administrators to provide teachers with time to learn about content standards, the consortium's educational goals, and to work with the other teachers to create place-based learning activities. The 1998 Yampa River Institute was held for K-12 teachers in the South Routt School District and the 1999 Institute was held for K-5 teachers in Moffat County School District. During the 1999 Institute, two teachers who were experienced in writing place-based activities presented their activities to other teachers and answered several questions about the activities. Then the teachers worked together to create their own place-based activities.

Community Organizations' Workshops.

The Nature Conservancy, the Teaching Environmental Science Naturally (TENS), the Story Gathering/Telling, and the Community Mapping workshops were planned and conducted by community organizations with funding from the consortium. These workshops focused on the specific objectives of the sponsoring organization.

The purpose of the Nature Conservancy's (TNC) workshop was for teachers to develop learning activities that could take place at the TNC's site. Elementary, middle school, and high school teachers from three districts spent two days at the Nature Conservancy's site in the Yampa Valley being shown various places at the site by environmental specialists who shared potential ideas for learning activities. The teachers were then given time to create learning activities that would be appropriate for their students.

The Teaching Environmental Science Naturally (TENS) workshop, co-sponsored by the consortium and the Colorado Division of Wildlife (DOW), introduced teachers and DOW personnel to locally created environmental activities and to each other. The environmental activities were designed for second and fifth graders and were based on Colorado State Content Standards. Each workshop participant received a manual that included the activities, suggestions of local places where the activities could be held, and supportive classroom activities. The idea

behind having prepared activities was to help those teachers inexperienced in environmental education feel more comfortable in taking their students outside. The success of this approach was confirmed by a teacher inexperienced in environmental education saying: "This is a lot easier than I thought." The TENS curriculum writers spent time teaching each activity with the adults playing the role of students. This hands-on, experiential approach to learning helped teachers to develop new understandings about outdoor education and its power to help students learn new concepts through experiential education. All of the teachers and the DOW personnel participated in the activities, gave constructive feedback to the curriculum developers, and shared insights with the group.

The Story-Telling/Gathering workshop was held to instruct teachers how to gather stories and create a community performance based on them. A Story-Telling/Gathering manual, a how-to guide for teaching students to gather stories, was given to the teachers attending the workshop. This workshop's format was experiential with the teachers participating in the story-gathering process. The teachers were organized into groups of four and then split into pairs. Each person in the pair told a story and then the other person repeated it back to them in first person. Each pair then chose one story to tell to the other pair and the group of four chose one story to perform. The open format of this workshop encouraged teachers to share their classroom experiences and personal feelings about the story-telling and gathering processes.

The set of workshops held by the Community Mapping Project was designed to help teachers learn about a computer mapping program, Geographical Information Systems (GIS), and to generate ideas of how the program could be used in their classrooms to engage students in real-world projects. At the first workshop, teachers from five high schools who taught multiple subjects were introduced to the Community Mapping Project and its goals. The teachers developed a mission statement and a transferable curriculum development model. The second Community Mapping workshop provided an opportunity for teachers and community members to come together to share ideas of what projects would be useful to the community. Federal, state, and local government representatives and community organizations representatives brought ideas for mapping projects to share with the teachers. A manual, created after the first workshop,

was presented to all of the teachers. It outlined the results of the first workshop where roles were clarified, communication lines were identified, goals were stated, and potential processes of creating projects were shared.

Workshops provided opportunities for teachers and community members to work together to create place-based activities. The workshops allowed these people to get to know each other and then these relationships were often the bases for new school-community collaborations to occur.

School-Community Collaboration

The consortium and its support for school-community collaboration developed from a previously existing valley-wide collaborative river project that was not able to use any of its funds for education. The consortium built on that project's community base to write its proposal for funding from the Annenberg Rural Challenge. During the year it took to write the proposal, the writers became determined to continue and increase school-community collaboration throughout the valley. This was accomplished by requiring a community partner to be involved in each curriculum development grant. Community partners included the U.S. Forest Service, the Colorado Division of Wildlife, the Colorado State Parks, the local Nature Conservancy unit, and many individuals. Those involved in these interactions found themselves in give and take situations, needing to balance too much and too little structure, a broadening of their expectations about classroom activities, and increased interactions with people outside of their daily routine.

If the consortium was to be successful at integrating place-based education into the schools as a part of their regular curriculum, then an atmosphere of mutual giving and receiving between the schools and their communities needed to be established. Teachers used community members, especially experts in local history and the natural sciences, to help with various field trips. Community organizations learned about content standards and how to adjust their curriculum activities to help schools meet these expectations.

Mentors.

Mentors were experts in the communities who were willing to work with the students when they engaged in new learning opportunities. Most of the mentors worked with students

during field trips, although a few helped students with mastering new computer programs. Three mentor roles became evident during my research: traditional roles, evolving roles, and non-traditional roles. Traditional roles involved mentors as lecturers on field trips and created a situation where the students were passive recipients of the experts' knowledge. Evolving mentor roles occurred when mentors voluntarily enlarged their roles beyond the traditional roles. Non-traditional mentor roles existed when students were interacting with mentors to master new skills and knowledge that the students needed to complete a project.

For many of the activities, the mentors were engaged in traditional roles as facilitators and experts. The mentors often met with the school groups at study sites and provided information about the subject under consideration. Other mentors met with students and shared stories about growing up in the area. Teachers usually worked very closely with these mentors to determine what needed to be shared. For example, the teacher who set up the Maybell Outdoor Learning Experience worked with the Bureau of Land Management (BLM) and DOW personnel to set up the activities, and depended on them to implement the curriculum at a site away from the school. Mentors also expressed an interest in limiting their roles to what they knew most about. For example, an employee for The Nature Conservancy was not willing to help students learn how to create planning proposals but was most willing to share her knowledge of the area's ecology.

Mentors who had worked with students of the same age for several years were willing to learn how to improve their presentations and asked the teachers for feedback on how to enhance their teaching skills. Mentors improved their lectures by sharing ideas and materials among themselves and discussing their presentations with the teachers. Bus drivers who took the students on regular field trips volunteered to help out and received some training to assist the students on their trips. The adults' sense of wanting to contribute and expand their roles in the curriculum activities may grow in other districts as schools and communities became accustomed to working together and a sense of trust builds between them.

Non-traditional mentor roles involved community people as experts working directly with the students. During the implementation of some of the place-based projects, it became apparent

that both teachers and students needed help in learning how to work with mentors in non-traditional roles. Another teacher admitted he needed reminders about contacting mentors and allowing them time to make arrangements to see the students: "I'm still learning the process." He then talked about taking his students to see two community people without calling them to make sure it was convenient. Another example was presented by a high school teacher who shared an occasion when two students and a mentor failed to meet because the meeting place was not clearly defined. The mentor waited an hour at the site while the students were waiting at the school. In response to these needs, the Community Mapping project liaison developed a guide to working with mentors. This guide was shared throughout the consortium by the project coordinator.

Community Organizations' Learning.

Community organizations found that they needed to increase their expectations and demands on teachers, as well as, adapt their activities to the Colorado Model Content Standards. The Nature Conservancy found that during the first year when their local site was available for field trips teachers tended to come without enough structure built into their trip. As Pat Peck, their educational specialist, said:

> The first year people were coming out for a recreational fieldtrip. By asking them (teachers) to come out for a pre-visit and an orientation, we can be real clear about what their goals are and if we can realistically [meet them] here.

The Nature Conservancy learned how to increase the amount of structure teachers needed to generate conditions for a successful field trip. The U. S. Forest Service community liaison discovered that teachers were much more receptive to her activities, and messages, when she adapted the activities to help students meet the appropriate content standards. By using content standards to create meaningful learning activities for students, both teachers and community organizations became more confident in their relationships with each other.

The presence of the consortium in the valley resulted in more community people being involved in and knowledgeable about what was occurring in the schools. Students involved in one Community Mapping project held community information gathering meetings and shared their findings with the DOW state governing board. Other Community Mapping students made

presentations to the county commissioners, created web sites, and produced maps showing the information that they collected and mapped for community organizations. These types of activities increased public awareness and involvement in public education.

Curriculum Development and Implementation Issues

Complexity theory reveals the complex ways in which nature works. "It (is tinkering) toward(s) order—toward(s) systems that are more complex and more effective. The process is exploratory and messy ..." (Wheatley & Kellner-Rogers, 1996, p. 17). It was in the exploratory and messy part of curriculum development and implementation that the issues of time, ownership, slow diffusion into the schools, lack of structure, formalizing the curriculum, content standards and communication became evident. I discuss these issues to bring to light challenges that were created by a local curriculum development process operating without the assistance of an outside institution.

Time

The issue of time fell into four categories: finding time for teachers to work together to plan and create new activities, finding time in the curriculum for the new activities, helping community members understand teachers' schedules during the school year, and time management. These four themes were found throughout the consortium, at all grade levels, and in all subject areas.

Finding Time To Create New Activities.

The teachers' feelings of not having enough time to create new activities was expressed many times during the course of my research. The comments related to how busy the teachers were during the school year. The lack of time to create new activities during the school year was observed by the consortium coordinator who started his job in February 1998. The DOW education coordinator, Thomas Frederick, also acknowledged the intense schedule of the school year when he commented during the TENS workshop: "Your platters are very full, we want to take some off."

Finding Time in the Curriculum for New Activities.

Many teachers saw place-based education as an add-on to their curriculum instead of seeing it as a different way to deliver the learning skills that their students needed to master. As I listened to those teachers who had made the most advances implementing place-based education into their curriculum, one common theme kept re-occurring: "You have to cut things out." However, eliminating lessons and units was not always easy. An experienced elementary teacher commented on the possessive sense of ownership some teachers have about their favorite topics, but she felt that teachers might be willing to eliminate some activities if they could see positive results from the new activity. Another way of helping teachers work with place-based education was identified by a community curriculum author when, rather than expecting teachers to cut activities out of the school curriculum, she worked to fit her activities into established classroom activities. A third way to involve students in place-based activities was to use summer vacation time as was suggested by an administrator. These three suggestions for increasing the amount of time available for place-based activities in the curriculum, replacing activities with new ones, a fit-in concept of place-based activities, and using the summer for activities were heard from teachers, administrators, and community members throughout the valley.

Community Members' Expectations About Teachers' Time.

Many community members either learned about the intensity of the teachers' school year during their contact with the consortium or brought the knowledge with them. However, not all community members appreciated the intense pace teachers maintain during the school year and the community members were anxious about the seeming lack of planning for and responses to community members.

Helping community members understand the pace of a teacher's day was a continual challenge for school personnel. Community members expected teachers to respond to their requests for information or products like business and professional people outside the schools. When the school response was slow or non-existent, community members did not know how to react. Community members who sought help with this problem leaned to support teachers by making the project a part of the teachers' daily routine. However, as long as community

members did most of the work involved with the project, teachers were slow to accept the responsibility for seeing that the project was accomplished.

Time Management.

Time management refers to using a predetermined schedule of events for organizing curriculum activities. The length of the consortium activities varied from one day or less to most of the school year. Time management for short-term activities, lasting one day or less and for long-term activities, longer than one day, are discussed below.

Strict time management for short-term activities of one day or less was common. For example, during the TENS workshop, teachers asked about the length of time needed for specific activities and the amount of time it would take for certain age groups to move between instructional sites. Another teacher organized field trips held near her school so that every amount of time was accounted for and she always had backup plans in case of inclement weather. Those involved with other short-term activities also paid attention to these types of time management details.

Long-term time management was one of the major challenges in implementing several long-term projects. While time management was identified and met early in some long-term projects, in other projects it was acknowledged but not implemented until it became a pressing need. Differing expectations about time management was a source of tension between community members and teachers. Community members were accustomed to setting a timeline with due dates and being able to meet them, but the teachers did not establish timelines and tended to rely on reacting to due dates to get things done rather than planning ahead to provide students with class time to complete a part of the project. After repeated requests from students and community members for timelines and time management skills, teachers accepted the need for timelines and time management skills for carrying out long-term projects. Once teachers reached this point, they allowed community members to create timelines for the projects and helped students develop time management skills.

Ownership

Ownership implies a sense of control over something and a sense of possessing it. In the consortium, ownership allowed people to feel a part of an activity and to have a sense of responsibility to see it through. My data revealed two types of ownership: deep roots and controlling. Deep roots ownership was when the person had a strong sense of investment and interest in an idea that seemed necessary to sustain an activity. Controlling ownership was when the person's sense of possession was so strong that it blocked the efforts of others to contribute to the activity and inhibited collaborative efforts.

Deep roots ownership.

Supportive ownership is needed to establish and sustain new activities, especially in classrooms (Cuban, 1984). The consortium discovered that trying to hire an outside person to take over a poorly designed project and carrying it out did not work, because of the lack of ownership by the new employee. Another example of the importance of a deep roots sense of ownership was evident in who submitted the first year grant requests. Sixteen of 24 first year grants came from teachers who were involved in the consortium as advisory board members or district team members. Comments from workshop organizers indicated that they were aware that the teachers who came to the workshops were the ones that were already interested in the activities. Through the workshops these teachers shared curriculum ideas, gathered new energy to carry them out, and increased their sense of ownership over place-based education ideas.

Controlling ownership.

A controlling conception of ownership precluded some people from allowing others to have some sense of ownership in the activity and this hindered the development of the activity. For example, one activity was developed by a team of multi-disciplinary high school teachers. The team leader controlled the activities and gave teachers assignments to carry out the identified steps. The teacher's controlling attitude was noted by a community member:

> This person is the only contact in the school and she's controlling the project. She mothers [another teacher]. She won't let them go on their own. It doesn't seem like she's involving all the teachers in the project.

Community members who had definite ideas of how projects should take place were also a threat to some of the activities of the consortium. Either they wanted to control the curriculum development and its implementation or they offered advice on how to do things without providing assistance. These people were seen to be very interested in everything that was happening and concerned about creating a successful outcome for the students, but their actions were not always collaborative in nature. This controlling type of ownership by both community members and teachers was a challenge to collaborative curriculum development because it blocked the ideas and energies of other people involved in the activity.

Slow Diffusion into the Schools

One of the hopes of the consortium was that teachers not initially involved in the activities would become interested in place-based education and implement it in their classrooms. But this diffusion of place-based ideas into the schools did not happen as quickly as members of the advisory board and district teams had hoped. Teachers lacked knowledge of the program, school administrators were not heavily involved in supporting it, and experienced teachers tended to dominate the facilitator's times that eliminated many new teachers from trying the activities. The lack of knowledge and the monopolizing of a facilitators' time allotments for a school led to disinterest in place-based education by some teachers and administrators and tended to block the efforts of the consortium to encourage the use of place-based education in the schools.

Lack of Structure

While complexity theory supports the idea that everything starts with a lack of structure, movement and development is always towards structure (Wheatley & Kellner-Rogers, 1996). Balancing between too much and too little structure was a challenge to teachers in the consortium not only when they worked with outside organizations but also when they worked with other teachers. An imbalance between a lack of structure and too much structure also frustrated community people working with a Community Mapping Project activity. The leader of the school group liked to be in charge and seemed to use a lack of structure as a way to control the activity. For example, on one occasion a community open house designed to gather community opinions was not organized until two days before the event and students were not prepared to give their

presentations until the day of the event. This lack of organization was frustrating for the community people, student mentors, and some of the teachers working with the project because of the last minute demands it placed on them. The community people involved in the project started to structure the activity themselves instead of waiting for the school group to create a structure.

In contrast, another group of teachers and community members created a different Community Mapping Project activity that was structured by the community members. The teachers and the community members discussed the need for structure at the early meetings. The community members emphasized the need for a plan and were encouraged by the teachers to do so. While these community people liked to be organized, they were flexible and able to cover all the information when a planned meeting with the students took place without one of the key community people present. Since this project was structured much earlier in the planning stage than the original mapping projects there was less confusion about what needed to be done. Once the adults had identified the important parts of the project, they helped the students to identify their roles and start working on the project more quickly than the group that was lacking in structure.

One goal of place-based education theory is to involve the students in real-world learning experiences about local issues and to help them learn to plan the activity. Helping students learn the skills to create a structured learning experience was challenging for teachers who had spent a year organizing their place-based high school course. The students still experienced difficulties when they started organizing and carrying out their own activities.

Students also recognized their need for more structure in the activities. During a project review meeting, students from several high schools were asked what they needed to be able to produce a better result. They responded by requesting that their teachers provide more structure and enforce deadlines.

Formalizing the Curriculum

The consortium's advisory board planned to create a library of place-based curriculum activities and required each curriculum development grant recipient to submit a copy of the

curriculum. However, the consortium project coordinator discovered that teachers did not include an assessment piece in their curriculum The lack of assessments for the activities and the disparate formats of the various activities prompted the advisory board to hire a consultant to analyze the grant requests, organize the activities into a common format, and gather any missing curriculum pieces.

Many of the consortium's curriculum authors created curriculum in an informal manner and neglected to spell out objectives and assessments. But some teachers reported that they liked being forced to think through the activity before they could receive a grant because it forced them to create a better activity. Formalizing the curriculum also allowed activities to be continued when an original developer left the school.

Content Standards

The Colorado Department of Education had furnished all the state school districts with the Colorado Model Content Standards and the districts involved in the consortium were aligning their curriculum with the standards at the same time as the consortium was developing place-based activities. The writers of the curriculum activities had no problems meeting the standards through place-based education. This was due partly to the broad nature in which the standards were written and also to the place-based concept that supports the study of place through every possible discipline. The number of curriculum activities was fairly well balanced with elementary schools developing 17 activities, and middle and high schools developing 15 activities. There were six activities that involved students from a variety of grade levels. As Table 1 shows, reading and writing, social science, science, and geography standards were most frequently addressed by the activities developed through the consortium curriculum development process. The grade level made little difference in the pattern of standards that were met through the consortium activities.

Table 1. Content Standards and Grades

Content Standards	Reading Writing	Social Science	Science	Geography	Math	Fine Arts
Elementary (17)	14	8	10	9	3	4
Mixed Grades (6)	5	1	4	3	1	1
Middle/High (15)	10	8	10	6	5	3
Total (38)	29	17	24	18	9	8

Elementary and secondary teachers responded to my question about correlating place-based activities with content standards with comments like: "It's easy" and "It does make you think through [the content]."

In all of the interviews and casual conversations with people involved in the consortium, I only heard one negative comment about correlating the content standards with the project activity. The group members had identified four interest areas in their activity that fit under the content standards of language arts, geography, mathematics and science. The team member said:

> These interest areas were identified to meet the concerns of the parents and at the same time incorporate the need to meet the content standards. The standards created a problem for an interdisciplinary project such as we are doing.

Other than this comment, there was no additional evidence that content standards created any problems for creating place-based curriculum activities. In fact, one administrator called the content standards "the glue that ties everything together." Throughout the consortium, the standards were viewed as supporting meaningful learning and as a structure for activities that could be understood by community organizations and schools.

Communication

For a successful outcome to an activity, communication was essential between the curriculum creator and those who conducted the activity. To be funded by the consortium, activities had to be shared by at least two school districts and a community organization. The need to include other school districts forced teachers to work with people they did not know and to adjust the activity to meet more than just the originators' interests.

Communication was also very important when the activity was originated by community organizations. These organizations found that they had to clarify their goals for the activity and be able to share their ideas with teachers so that the activities would be adopted by the schools. Communication between organizations and schools was enhanced when organization representatives became aware of and used the Colorado State Content Standards to design their

programs. Organization representatives found that matching their activities to content standards became a method of encouraging teachers to use their services.

For projects that required a great deal of school-community interactions, the resulting communication either enhanced the project or caused frustrations. Projects were enhanced when community mentors verbally supported the teachers and students involved in the projects. Teachers and community members found themselves meeting more people and finding new sources of information outside of their work places, and some teachers gave instructive feedback to community members who had created curriculum activities and vice-versa. However, frustrating interactions happened when communication was not clear. Sometimes, teachers and community members differed over whose responsibility it was to make sure that planned activities happened. Community liaisons did not always receive copies of curriculum activities when teachers created them for the grant the community liaison had put together. Community people who did not work with teachers in creating activities found it hard to find teachers who were willing to use the activity. Students were frustrated when a community mentor was unable to communicate the information at a level they could understand. Communication between individuals in schools and in the communities was positive when it was clear and frustrating when it was not. However continued efforts by everyone helped to resolve the miscommunications and allowed the activities to continue.

Curriculum Development and Implementation Outcomes

Outcomes of the development and implementation of place-based activities included adult learning and excitement. Both teachers and community members had opportunities to learn in classroom, or formal, situations and from each other, informally, whenever they came together. Excitement emanated from those involved in the activities: students, parents, teachers, and community members.

Adult Learning

Learning opportunities for adults involved in the curriculum implementation happened in formal and informal ways. Formal learning took place in classrooms and informal learning occurred when adults engaged in reflective observation about the activities. Formal learning

included classes in how to operate a geographic information system (GIS) computer program and the TENS and Story-Telling/Gathering workshops. The GIS classes were held at a local community college and the teachers received additional help on learning GIS through Environmental Systems Research Institute, a GIS software company, and their tutorials. The TENS and Story-Telling/Gathering workshops, previously discussed, brought teachers, curriculum writers, and community experts together to discuss the curriculum and methods for collecting stories.

Informal learning for teachers happened whenever they met with other teachers and community people. Teachers gained new strategies and ideas about managing fieldtrips and classrooms from each other. Informal learning among teachers helped them create activities that were interesting to the students and easier for the teachers to accomplish. Informal learning also helped teachers become aware of new ways to think about their roles in education; such as, becoming facilitators of student learning and perceiving themselves as learners along with the students. Teachers had opportunities to experience a wide variety of learning activities that involved community members working with their students. These experiences helped teachers broaden their perception of activities that should be included in their classroom and the importance of bringing in community members to share their expertise with the students. This openness to new ideas helped teachers broaden their perspectives as well as enriched the students' learning opportunities. The consortium process of curriculum development deepened the teachers' intellectual knowledge of environmental education and about the Yampa Valley through the use of community experts.

Community organizations learned more about schools and how to work with them effectively. Community members learned how to listen to students to refine their curriculum while also working with teachers to make sure the curriculum helped the students meet content standards. Community members also learned that teachers were unaccustomed to working with community members and created a handout with reminders about how to work with community members for the students and, therefore, the teachers. Community members also learned that

teachers wanted activities that they could fit into their regular curriculum rather than something that had to be added on to their curriculum.

These informal learnings by both educators and community people helped to strengthen the work of the consortium by encouraging them to learn more about working with people from other professions and to learn from the students.

Excitement

Excitement emanated from everyone involved in CONSORTIUM activities: students, parents, educators, and community members. Students' reactions were reported by their teachers in these types of comments: "Oooh, that it inspires kids. It makes learning real. It builds enthusiasm in the children's work." Some high school students involved in creating a web site for a community museum were given the opportunity to meet with the community partners in the project. As the group of students realized that the project was authentic and not just a homework assignment, their excitement grew and grew. The city mapping director reported:

> When the high school students realized it was real, they checked to see how much time they had left. 'We've got an hour left. Let's go to the museum!' And they were out the door before I had time to call the museum director and warn her they were coming.

The museum director continued the story: "The kids came swarming up the steps. It was overwhelming. It was like: CHARGE!" Other high school students became so involved in their projects that they extended the projects beyond the original goals.

Parents reported that their children were enthused about their projects. Two parents reported that their son talked continuously for 20 minutes at the dinner table about whether or not cars should be removed from the river at a wildlife area site for which the students were developing a management plan. A school administrator commented about how surprised she was with the numbers of parents and community experts involved in a third grade camping trip. A group of high school parents, whose children were to be involved in a Community Mapping activity, spent an extra ten minutes with the teachers during an open house.

The educators' excitement was noticed by other teachers as well as by parents. As one teacher reported after a school open house: "Parents said that they've never seen teachers as

excited as we were about the project." Teachers talked about their own excitement as they were learning new things and watching their students' involvement in the activities:

> It's fun for me as a teacher. It adds a new inspiration or a new excitement to my teaching. I like the idea of doing something different and it's a challenge to create it and see it through but I think the kids are the ultimate winners. I think they are excited about school. I've seen it in their writing as a result of it.

Community members responded to the new activities by volunteering their time and expertise to the students and the consortium. A professional videographer created a publicity video and community mentors spent far more time working with the students than their project required. Some community people were enthused over the excitement that the teachers were showing about the consortium activities. A school board member reported that he had heard a lot of postive responses from community members about the activities that the teachers had created and the students' responses to them.

Discussion

The consortium provided educators and community people the freedom to develop curriculum activities in their own ways. Curriculum was developed by individuals who wrote grants, attended workshops, and collaborated with educators and community members. The issues that arose during the curriculum development process were both personal – time and ownership – and organizational – time, diffusing slowly into the schools, attaining an appropriate amount of structure, formalizing the curriculum, and meeting the content standards. People involved in developing new curriculum activities found that formal and informal learning opportunities became available to them and that involvement in developing and implementing new curriculum activities and excited students, teachers, and community members.

The consortium encouraged classroom teachers, instead of committees, to create place-based activities for the students rather than adopt previously created curriculum. The consortium funded teachers to create their own place-based activities. This funding focused the curriculum development on the teachers and supported their direct participation in creating the activities. The teachers who developed curriculum activities were very excited about their involvement in creating the activities and how well the students responded to them. The teachers' direct

participation gave them a sense of ownership over the curricula and helped to insure the continuing use of the new curriculum activities in the classrooms (Bowers, 1991; Cuban, 1984; Ponder, 1983). Through the teachers' direct participation in creating the curriculum activities, they became involved in individual change processes. These processes allow the personal growth and development of the teachers that, in turn, create better learning experiences for their students. The teachers involved in creating new activities, attending workshops, and establishing closer school-community collaborations found themselves dealing with new issues, learning new methods of teaching, sharing their learnings, and becoming excited about place-based education. Also, involvement in these activities helped teachers develop personal attributes that have been identified as change skills: vision building, inquiry, mastery, and collaboration (Fullan, 1993).

Vision building.

Individual change occurs when educators are encouraged to re-examine their visions of education and why they have chosen to be educators (Fullan, 1993; Palmer, 1998). One reason often cited for being a teacher is to improve society. Place-based education is a theory designed to improve social and natural environments; therefore it supports educators' desires to improve society. Thus, place-based education's moral purpose was reinforced among educators through opportunities provided by the consortium for reflection and communication about their desires to improve society (Spillane, 1999). Workshops contributed to vision building by bringing together teachers and, sometimes, community members to create new activities that involved students learning about and caring for their environments. Each workshop's goals related to the consortium's vision of place-based education in the schools. The workshops' formats encouraged participant interactions that provided a venue for sharing and building a vision of place-based education in the area.

Inquiry.

Another personal capacity needed for change is an attitude of inquiry or constant learning (Costa & Garmston, 1997; Csikszentmihalyi, 1990; Farber, 1991; Fullan, 1993; Langer, 1989; Perrone, 1991). The consortium and the schools encouraged teachers to engage in continuous learning by providing time and opportunities for inquiry during common planning times and by

supporting programs such as the Critical Friends program, the workshops and school-community collaboration (Tharp & Gallimore, 1988). Being open to continuous learning helps professionals have more interest in their jobs (Brubaker, 1994). Indeed, the teachers involved in the consortium curriculum development process showed their excitement about developing and implementing new curriculum activities (Csikszentmihalyi, 1990). Teachers also praised the informal learning that occurred when they were with different teachers at workshops and on fieldtrips. Teachers found themselves learning along with their students and they enjoyed it.

Mastery.

A third personal capacity for change is mastery, or becoming an expert, by experiencing and expressing new behaviors (Csikszentmihalyi, 1990; Farber, 1991; Fullan, 1993; Gardner, 1991; Langer, 1989). Those teachers who took several opportunities to develop place-based activities were the ones who expressed the highest excitement about developing their own curriculum. Place-based activities took students and teachers outside of the classroom walls and encouraged teachers to use different teaching methods. Many teachers found that teaching in a more experiential way was not as hard as they expected. By demonstrating mastery over new skills and ideas, educators had a new sense of control that enhanced their sense of well-being and helped them become change agents (Paris, 1993). Consortium educators who had the most experience in successful place-based activities were among the most vocal supporters of place-based education in meetings, workshops, and in interviews. They had mastered the concept of place-based education by developing place-based curriculum activities that met content standards and by observing the effects the activities had on their students.

Collaboration.

A fourth personal capacity for change is the ability to work in a collaborate environment (Csikszentmihalyi, 1990; Farber, 1991; Fullan, 1993; Langer, 1989; Palmer, 1998; Senge, 1990). An ability to work collaboratively with others opens the potential for continuous learning from multiple perspectives. Collaboration skills are necessary for interdisciplinary work and school-community interactions to create place-based learning activities (Fullan, 1999). Developing an ability to work in collaboration is also a quality that helps people develop a positive sense of

themselves. The workshops were both a venue and a medium for sharing and developing curriculum that brought together teachers from four school districts in collaborative atmospheres and helped overcome the isolation that they often experience (Cuban, 1984; Farber, 1991). In fact, the positive teachers' responses to the workshops showed how glad the teachers were to meet new people, share ideas, support each other, and learn new instructional methods. One teacher advocated continuing the workshops by reporting that all of the good curriculum activity ideas were generated when teachers were together.

Helping individuals develop the four qualities of a change agent – vision, inquiry, mastery, and collaboration – also provides them with skills that help them achieve a sense of control over their lives (Csikszentmihalyi, 1990; Farber, 1991; Fullan, 1993; Langer, 1989; Palmer, 1998; Paris, 1993). The teachers' excitement about their curriculum development activities for the YVLEI indicates that their involvement engaged them in activities that stimulated and interested them. If for no other reason than this, local curriculum development is a worthwhile educational activity.

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